Notebook, N-03-03-14

XE173 N-03 0314

M.A.R. 1418.

(13"3E0,1PG. P60

Try gl. alone; Pb, + Hg. & Try C_5H_9OH with K-salt. with Na-salt.
Try [illegible] N.

Try mixing in dif. proportions.
Try " " " "

1

(Pptd. ~~non-tr~~ opaque)

Na-stearate hard; sol. in CH_3CHO, $(CH_3)_2CO$ (!), C_5H_9OH; from latter two transparent. To soften it, I tried to prepare non-crystalline transparent mixtures with K-salt. The latter obtained pure by titration (not carbonate). It crystallizes with much greater readiness than Na-salt. Mixed acetone solutions of Na-salt + K-salt in different proportions: on cooling all crystallize. Tried mixtures of alcohol & acetone as solvent: same result. Tried adding various proportions of glycerine to acetone solutions; same result. Tried adding [illegible]: same result. ∴ K salt alone or with Na-salt unsuitable.

Na & K salts not sol. in oils. Mixtures rough under micro. Fatty acids probably soluble in fats. Stearic & olive look rough.
Na-oleate alone unsuitable (does not ~~form~~ gel properly)
Na-stearate + oleate mix well.

Examined lead oleate: with alcohol, ~~[illegible]~~ acetone, ether, aldehyde, carbon disulphide, & by destructive distillation: negative results.

Saponified: 1kg. castor oil by starting with strong NaOH & later diluting & salting out. Soap ~~[illegible] by [illegible] salting~~ (& thus quickly [illegible] of the small amts) partly decomposed with HCl, freed acid from mechanical impurities [illegible] K salt.

Saponified: 500 g. [illegible] butter with boiling KOH, first strong, then diluted with H_2O, decomp. ~~Sol.~~ Boiling sol. with

List of some preparations.

1. Натрій стеаратъ обычный. Не раств. [illegible]
въ метиловомъ алкоголѣ
2. Сушеное мыло изъ пальмоваго масла.
3. Пальмовое мыло сушеное [illegible] со спиртомъ и растворенное въ алкоголѣ съ небольшимъ количествомъ сѣрнистаго углерода. Пальмовое масло и натрій 2 ½ глицерина. (P)
4. То-же съ несколько большимъ количествомъ сѣрнистаго углерода. Миллеръ говоритъ отлично.
5. То-же; очень мало с.-у., но порядочное количество глицерина. Миллеръ говоритъ не стоитъ пробовать, но я думаю, что мысль 'глицеринъ' недурна.
6. Калій стеаратъ — перегрѣтой. Растворилъ 10 гр. въ метиловомъ алкоголѣ; результатъ — кучки кристалловъ, такъ что масса непрозрачна. Къ небольшому количеству массы прибавилъ с.у.; результатъ: чистый растворъ при обыкн. температурѣ и послѣ испаренія с.у. — непрозрачно. То-же съ другими растворителями.
7. Натрій стеаратъ безъ алкоголя, сушеный на воздухѣ.
8. Натрій стеаратъ изъ алкоголя (карбонатомъ). Не растворяется вполнѣ въ метил. алко. [illegible]

HCl (about 1l.); on cooling, separated the solidified acid & treated with boiling H_2O; on cooling, ~~p~~ dried the acids by pressure and tried to purify by distilling in vacuo (Krafft): lost about 3 days on this purification & did not succeed (foaming, acid & colored impurity inseparable by alcohol, ether, carbon disulphide, acetic acid; slight improvement with boneblack). Try [illegible] Acid left crude & a new preparation undertaken.

Saponified 1 kg. myrtle wax with ~~st~~ strong KOH. Results no good: ~~[illegible]~~ alkali salts ~~not~~ very incompletely soluble in H_2O or alcohol. HCl does not completely decompose them.

Examined myrtle wax: it is no good; completely soluble (4/5 ought to be) in alcohol, &c.

[illegible] spoiled. Try again.

Z works excellently under knife. Shrinks.
X too shrunk
[illegible] too shrunk

Addition of some NaOH to green gives transparent red. Small sample still drying. Tried NaOH with Z: when quant. of NaOH is small, some improvement in transp. When greater — separation into two layers; remarkable fluorescence in this & several other cases. (See next ~~pg~~ leaf about Z). Not worth while trying further.

9. Желтоватое [illegible], сушимое при высокой темп. Очень чисто и нейтрально, без глицерина и колофони. Точный состав неизвестен

10. Липкий стеарат.
11. Z. Таллоу, поташное и несколько натрій без глицерина или колофони.

V. Поташное и натрій, таллоу и коко-[illegible]. С глицериномъ

T-[illegible]. Таллоу и натріем. Без глицерина или колофони.

ORANGE N.J.

T. Таллоу и кокос ойл. с натріемъ. Кипяченое. Без глицерину или колофони.

Y. Равные части кокос ойл. и таллоу и натріемъ. Прозрачн.

Examined commercial palmitic acid: dist. in vacuo, separates into 3 portions; 1 black left behind; 2nd liquid (!) with NaOH - transp. soap, very hard; 3d solid (!) with KOH jelly-like mass. (Transp.). Experiment abandoned as unreliable on account of impurity of commercial product. But remember transparency.

Z does not dissolve in usual amt of 90% alcohol. Solution perfectly opaque on cooling + some liquid (!!) remains free, as if in chemical excess. (see foregoing leaf about NaOH).

Dipped cylinders just before solidify; result no good.
Dipped beaker - ghastly
Prepared K - ~~[illegible]~~ undecylenate.
" Na "

Na-Stearate with my soap-alcohol — transparent but hard (on drying).

~~Dipped cylinders~~
Palmitic acid:
260 g. Japan wax saponified with ~~[illegible]~~ ~~31% KOH sol.~~ 100 g. KOH (Merck sticks) and excess of 90g. H_2O.

Dissolved 2g. K-palmitate (crude) in 3,7cc of my alcohol; on cooling, no ~~[illegible]~~ setting; ~~added~~ dissolved in this as much as possible Na-stearate (with smaller amts – no setting); result: on cooling, soft, soapy, non-transparent mass. But remember the solvent capacity of K-palmitate. Sample still drying.

Na-stearate dissolved in my alcohol, (filtered from residue); on setting, added little c.y., which re-dissolved the mass; left solution to evaporate; it set ~~[illegible]~~ transparent but opalescent; still drying.

Examination by Miller Mar. 23 of ~~[illegible]~~ made Mar. 14:

ⓐ G coated with double spectacle. Rough under micro.

ⓑ P + 10g – promising Apr. 8 – dies?

ⓒ Z (thick sample cut down thin). Even better than following with slight improvement, the things Apr. 8 still good.

6 ⓓ Z (thin cast, unfiltered, slow cooling). Very promising, excellent cut but not ~~quite~~ absolutely clear. Not tough, nor sticky.

ε 6 ⓔ P. Promising. Not tough not sticky, excellent cut, much like Z. Not absolutely clear.

E (f) Z (thin cast, rapid cooling). Much worse than Z above i.e. (slow cooling).

All these put up in tin cans on Mar 25. & taken out again Apr 9 (except b, which had been taken out much sooner).

Preparation of Sulphocarbanilide: purified commercial aniline, mixed in proportion of 2 molecules of aniline to one of carbon disulphide (slight excess of latter) added 5 cc. 95% alcohol & allowed to stand in a warm place. Within two weeks the mass was completely solidified. It shows distinct crystalline structure which cannot be destroyed by heating with aniline. It chips & is by itself entirely inappropriate for cylinders.

Prepared Li-stearate, on account of its being an amorphous substance. It does not melt, comes down from its solutions as a powder (discuss this point with Mr. Edison!), & is by itself entirely inappropriate for cylinders.

Prepared Na-propionate, on account of its being an amorphous substance. It does not melt, comes down from its solutions as a powder, and is by itself entirely inappropriate for cylinders.

Breaking the foam by & softening Par. is well worth investigating. So far poor results on account of roughness of surface; but systematic work may lead to interesting results.
Perhaps the same about Oxal. acid.

ⓖ Examination by Miller on Mar. 26 of sample $X + \frac{X}{5} 2$, ~~pr~~ set away Mar 18. Result: (Gill says:) almost ~~soundless~~ cut, perfectly smooth under microscope, not sticky, extremely easy cut, not tough, long shavings (somewhat damp, but this is harmless). ∴ Thus far the substance is excellent; ~~and~~ requires casting & further trying, but this is impossible on account of blow-holes & foreign material.

Additional list:

ⓗ $X + \frac{X}{5} 2$. & in excess of new alcohol, filtered, distilled off much alcohol, cast on March 29. Apr. 14 - little changed for a week, still excellent.

ⓘ same as ⓗ. Mar. 29. Apr. 8 - dew?

ⓙ $X + \frac{x}{5} 2$ (filtered), old alc. Mar 26. Apr. 8 dew

ⓚ $X + \frac{x}{2} 2$ (unf.), old alc. Mar 19. Apr. 3 dew & roughness

6 ⓛ $X + 0 2$ (unf.) Mar 18

ⓜ $Z + \frac{1}{5} 2$ (unf.), Mar 14, set to dry long ε ⓝ $X + \frac{x}{10}$ $\frac{2.}{2}$ old al. Mar. 18

NB. [illegible]

ε ⓞ H.C.(9) + K.C.(1) + 2.(2). Mar. 30 (filt. & excess of new alc. distilled off). Examined by Miller Apr. 1. Result: Cuts smooth, but has very fine longitudinal lines and chips; Miller thinks it won't do. (only when cut very deep). Apr. 8 Much dew

Attacked ⓟ H.C.(5) + H.O.(5) + 2.(2), new alc.; filt., distilled off excess. Mar. 30; soon transparent. Record May 20 (Girl); soft, smooth under micro., noiseless;

ε ⓠ cylinders H.C. + $\frac{2}{2}$, filt., but possibly contains chips of old. comp. Mar. 31. (cylinder cracked). Apr. 3 found much of 2. forming a dew on the surface. Apr. 8 much more dew.

ε ⓡ H.C. + $\frac{2}{2}$ + excess of 90% alc., filtered, distilled then cast turbid sol. in jacketed mould Apr. 2. Mr. E. (Apr. 3) thinks this is the best.
Apr. 8 much dew

Ⓢ Na-ricinol. (25g. + 50 cc. photog. alc., distilled off 20 cc., but was compelled to add again 10 cc. of photog. alc.), cast in two tubes Apr. 2. Apr. 3 [illegible] ~~brought~~ bad. Apr. 8, on scraping off surface I think excellent.

ⓣ P (15g.) + Z (.5g) + 56 cc. old alc.; filtered, distilled off 18 cc. Apr. 2.

ⓤ Na-undecylenate (15g) + photog. alc. (56 cc.) + water (5 cc.); necessary to distill off most of the alcohol. ~~[illegible]~~ Apr 4

Prep. of pure myristic acid:
500 g. of nutmeg butter digested with alcohol.

(See p. 1 bottom)

Prep. of pure lauric acid: Oil of bay saponified with exceedingly strong caustic potash by boiling for several hours, first with reflux condenser, then in open dish; resulting mass decomposed by HCl [illegible]

(w) Z(25g.) + [illegible](5g.) + old alc (94 cc.), distilled off about 1/2 of the alc. + [illegible] Apr. 4. [illegible] not yet dry.

(v) Na-palmitate (15g.) + old alc (56.4 cc.)
Cast Saturday, Apr. 5.

(x) H.C. (30g.) + $\frac{H.C.}{2}$ z. + old alc. (150 cc.), filtered, distilled off 70 cc., cast, Apr. 6
Found cracked in the evening of Apr. 6.

(y) H.C. + $\frac{H.C.}{2}$; attempt to cast without cylinder failing (Sunday, Apr. 5): was not come off the mould (taken up).

(z) H.C. + $\frac{H.O.}{10}$ + $\frac{H.C.}{2}$ z. Cracks.

(a') H.C. + $\frac{H.C.}{2}$ z. Cracks

(a'') H.C. + $\frac{H.C.}{2}$ z. Sticks to greased mould [illegible]

(a''') To repeat (h): X(100g.) + $\frac{X}{5}$ z. + 700 cc. old alc. (1 l. flask filled up); filtered easily, distilled, losing about 50 cc. of solution in beginning, then distilled off 400 cc. & cast in 0°C. Apr. 13 in tinfoil mould. Shrunk down so that it was impossible to make a trial. Apr. 24 still somewhat rough —

(a^{IV}) $X + X_2$. + 500 ~~cm~~ cc. phot. alc. + 60 cc. H_2O, filtered, distilled off 400 cc. (?) in salt bath, cast two Apr. 15. in small moulds. Shrunk down ~~so that it was impossible to make a trial~~. Apr. 24 ~~[illegible]~~ rough.

(a^{V}) $X + \frac{X}{2}$ 2. + 560 cc. abs alc. + 300 cc. Abs., filtered, distilled off 400 cc., cast in large moulds Apr. 26. Weight 10 times of [illegible] [illegible]

(a^{VI}) $X + X$ H.C. $+ \frac{X}{5}$ 2. $+ \frac{X}{2}$ 2. + cc. phot. alc. + cc. H_2O; filtered distilled off cc., cast in large moulds Apr. —

New Series

(a^{VII}). Melting butter twice extracted with boiling alcohol. Residue dried at room temp., filtered molten. Result: white, smooth, hard mass, non-homogeneous with glycerin + olive oil. Small amt softened by alcoholic extract. Result rough. What can be tried further?

Monostearin:

1. Stearic acid (~~40 g.~~ 37 g) heated 50 hours with ~~gl~~ glycerin (40 g), ~~at~~ 235° C (See further)

2. St. acid (30 g) heated with glycerin (30 g) 50 hours at 235 °C. (See further)

3. St. acid (30 g.) heated with glycerin (30 g) - 36 hours at 2?0 °C

Mannitantetrastearate

4. Stearic acid (32 g) heated with mannite (20 g.) 36 hours at 220 °C

Ethyl stearate

Stearic acid (30 g.) heated with absolute alcohol (excess). 48 hours at 220 °C. The preparation lost by accident.

Abietic acid with lithia gives brittle transparent mass (on fusing). Chips out with the knife & is hard. ∴ no good

$$\begin{array}{r} 45 \\ 90 \\ \hline 405 \end{array}$$ 401

(1) and (2) of preceding page heated (without previous purification, except separation of glycerin) with molecular quantity of stearic acid to 180–200° C. in retort + when one mol. H_2O had passed over the liquid in the retort was cast in the form of a cylinder. The substance (impure di-stearin) was very rough under the microscope + Miller thought it was not worth while making a trial. The cylinder is marked "Distearin".

To repeat (h):

2 casts: $X + \frac{X}{5}$ r. + 4 X_{cc} neu alc. (i.e. 1000 + 25), filtered, distilled off $1\frac{1}{9}$ X_{cc} alc., cast in large mould.
May 9.

Modified (h):

$X + \frac{X}{4}$ T.C. + $\frac{X}{5}$ r. + 4 X_{cc} neu alc., filtered, distilled off $1\frac{1}{9}$ X_{cc} alc., cast in large mould.
May 11.

nitrap. + $\frac{15r}{100}$ cm. kie. — Rough under micro., sounds rough

n nap. + .15 r cm. kie. + .15 r. O.C. Under micro. better [illegible] cracking. Slightly sticky. Sounds rough.

Dip + small amt. Ailsworth's transp. comp. Promising [illegible] poor.

FRANK L. DYER
OCT 16 1908
ORANGE N.J.

Hay. always with wood - with to [illegible] - [illegible] of OC,
Cook much under [illegible].
Fresh with OC., equal pts., somewhat too
mixing ; with clean cut. in liquid - no food

Карнуба опыты:

1. [illegible] рицинолеат (5) + карнуба (1) — мягкая, [illegible] [illegible].
2. [illegible] [illegible] — [illegible].
3. " " (5) + карнуба (5) — [illegible] твердо, [illegible] звук.
4. [illegible] рицинолеат (1) + карнуба (5) — [illegible] твердо, звук?
5. Кали рицинолеат — [illegible] [illegible] [illegible].
6. Магний [illegible] стеарат (1) + карнуба (1) очень твердо ([illegible] [illegible] [illegible], [illegible]). Звук?
7. Карнуба — твердо, невозможно [illegible] [illegible].
8. Карнуба с [illegible] — [illegible] (см. 7) и не [illegible].
9. Myrtle wax + Carnauba 5:2, pretty soft, surface not bad. Harden with gum + Cast -

10. Bees + Carn 1:1, cracked
11. " " " 2:1, cracked

7.12. Na-isobutyr + Car 2:5, foam, decompos., cracked; very hard, pretty good surface

13. CuSt + Car 5:2, good surface, cracked

14. Ail + Car 2:5, irregular contraction, cracked

15. CuSt + Car 1:1, badly cracked

16. Car + Ail sol (20%) 5:2, irregular contraction, cracked

17 Crude Na-ricin + Car 2:5 cracked

18 ZnSt + Car 2:5 Cracked

19 Car + White cryst wax 5:2 cracked pretty good surface

20 Nabutyr + Car 2:5 cracked (foam decomp.)

Mr. Edison's Comments.

29. Loud, quality good, scratches bad, cut bad, breaks out, no polish

21. Monosh. + Car 1:1. Much like old comp. Cracked. Good surface.

22 Carn + Myrtle soaps 5:2 N.G.

23. Dam + Car 2:5 Cracked

24. Myrtle wax + Car 2:5 Cracked

25. Di-stearin + Car 2:5. Cracked. Pretty good surface

26 Car + White Cryst wax 2:5 Just cracked. Soft.

27 NaOl + Car 1+00 ~~M~~ Crystal. hard. N.G.

? 28. Mannitan tetrastearate

? 29 Car + White Cryst wax 1:1

? 30 Car + Crude Na-ricin (foam)

Mr. Edison's comments:

33. Rather rough. Quality fair, not loud, but not smooth. Squeaks
34. Very loud when tracked light; if tracked deep, rough and quality banjo
35. Too rough for use
36. Not very loud, rough

38. Loud, no swell, fairly smooth.

39. Where tracked lighter, quality fine. Cut little rough. This is good material. E.
40. Smooth cut, fairly loud, quality fair. Finds body + chatter.
41. Cut too rough

30. Myrtle wax + Car 1:1 Cracked
? 31. Car + Na-ricin 5:2
? 32. Dam + Car 5:2
? 33 Ail + Car 5:2
? 34. Car + Na-St 1:1
? 35 " + Dam 1:1
? 36. " + Sperm 5:1
? 37 " + " 20:1
? 38 Ail + Sp 20:1
? 39 Car + Sp 10:1
? 40 Ail + Sp 10:1 Try again, Speedy
My opinion — W. J.
? 41 Oury + Car 1:1

Mr. Edison's Comments.

42. N.G.

43. Rough cut, not loud, no improvement.

? 42 Ail Soz

? 43 Car + Ail Soz 2:5

? 44 Car + Sp 5:2

45. Car + Crude ricin 1:1, hard, does not crack, but difficult to cast on account of foam

? 46. Myrtle soap + Car 1:1

47. Two more casts, at Mr. Edison's request, of ㊻.

48. Car. Cut out

49. [illegible] (? [illegible]) + Car 1:1

FRANK L. DYER
1908
ORANGE, N.J.

No. 11. Good, very little scratch, although record rough. If this could be got rid of, it would be very good.

2. Wave marks strong, tracks deep; little jumps; record looks good; scratches not same as ns. white.

No. 9. Quite good; chipped out, hence scratches. [Add something to soften at high temp.)

No. 14. No chip, polishes indentation, but Fred says scratch [when deep, it jumps out].

FRANK L. DYER
ORANGE, N.J.
OCT 5 1903

. Good, not chipped. Repeat.
15R. Badly chipped Sept. 20, '03)

14 Chipped

New Series – July, 1903

No. 1 Lion 8.
No. 2 " 8.5 no holes.
No. 3 " 8.6 incomplete
No. 4 " 7
5. $\bar{S}$SA + $\bar{S}$O 4%
6. Car + x 10:3
7. Car + R$\bar{S}$ 20:1
8.
✓ 9. Pb$\bar{S}$ (formate, acid ~~acetate~~, equiv'ts) (75g.) + Li$\bar{S}$ + S (3:1) (45g.) + LiS (20g.)
10. Car + Cu$\bar{S}$ (5:2)
✓ 11. 284g. $\bar{S}$ + 71g. PbCO$_3$ (hot) + 150g Na$_2$S (aq)
15. (11) 50g + Car 20g.
13. (11) 50g + Bers 10g
✓ 14. (11) 30g + Cor 6g
~~15. (11) 60g + [illegible] 6g~~
16. Res. of 15 (5–10g.?) + 50g (11) + 20g. Car. + 5g. Cu.

17. Chips at ord. temp. At 128° F good tone but scratches, & not so loud as (16).

20. " " " "

19. "badly" " " Qual. good. At 125° F still chipping out

15. Same as (19). At 125° still chipping

18. Can only be taken at ord. temp. Good, slightly too draggy.

#16. Ord. temp. Good, chips out. At 125° good. No scratch to amount to anything. Tracked deep yet does not chip but jumps out. To be reproduced and tried at 130° with still deeper tracking, to prevent jumping out.

20. At 125°. Good, not quite so good as 16 R. Not jumped out so much as 16 R

AR. Too hard (Sept 20 '03)

BR. Too hard (" ")

21 R. Too hard (Sep 20, '03).

---

17. (11) + Cer 20:1

18. (11) + mod. Car. 5:2. The mod. car. is Car + X 5:2.

19. 42g. (11) + 42g. Car. + 4g. cer.

20. (9) + 5% cer.

New Series, to repeat (16). Aug.

A. 426g $\bar{S}$ + 40g Na_2CO_3 + 71g $PbCO_3$ boil. up (bad break)

B 426g S + 32g Na_2CO_3 + 71g $PbCO_3$ (Brunswick pot)

D_1 426g $\bar{S}$ + 34g Na_2CO_3 + 71g $PbCO_3$

D_2 852g $\bar{S}$ + 68g Na_2CO_3 + 142g $PbCO_3$, i.e. Same as D_1, yet break a little better & very much like (11)

To repeat (16):

AR. 150g (A) + 60g Car. + 13g Cer.

BR. " (B) + " + "

DR. " (D_1) + " + "

also:

21. 150g (D_1) + 60g. Car.

22. Crystallized, blow-holes.
25. Crystallized, 23R too low (Sep 20, '03)
28. Crystallized
24R. Too low (Sep 20, '03)
26 Horribly chipped

27. Chips, too low

25. Too low

crystallized?

22. 100g. (D_2) + 40g. car + 4g. cer.
23. 100g. (D_2) + 40g. car. + 14g. mod. car. (with scum) (35)
24. 100g. (D_2) + 40g. car. + 8g. cer.
25. 100g (D_2) + 40g. car. + 9g. cer (60)
26. 100g. (D_2) + 40g. car. + 28g. mod. car (35)
~~27. Same as (22)~~
27. 100g. (11_1) + 40g. car. + 10g. cer.
a. 28. 100g (11_1) + 40g car + 9g. cer
29. ~~220~~ 240g (11_1) + 18g. mod. car. (without scum) (35)

~~To repeat (18)~~
~~433g B + 27kg~~
F. ~~4~~ (423g 5 + 59g PbO + 25.3g Na_2CO_3)
low heat. Product crystallized

$1136 - 73$
$426 - x$

426×73
1278
2982
$1136)\,31098 = 27.4$
8378

30. A little ~~too~~ hard

426×159
3834
3408
426
$1136)\,80514 = 70.9$

$852 + 284 = 1136$

$142 + 47 = 189$

$= 40$

32. Horribly chippy – N.G.

33. Chips

34. Frothed; pimply

$G = 1136\,\bar{S} + 189\,PbCO_3 + 73\,Na_2CO_3$
$(= 426\,\bar{S} + 70.9\,PbCO_3 + 27.4\,Na_2CO_3)$

35. Chips

ER. $568g\,\bar{S}$ + 125g L + ~~[illegible]~~

30. ER (75g) + Ca (75g) + Ce (24g) heated, then added Na_2CO_3 (5g).

31. F (100g) + Ca (100g) + Ce (30g), heated with 3g. [illegible], but the Cotton seems to be all at bottom of dish.

32. $(1\frac{1}{2})$ 100g + Ca (40g) + Ce (15g)

33 $(1\frac{1}{2})$ 100g + Ca (40g) + Ce (20g)

34 $1\frac{1}{2}$ (100g) + Ca (40g) + Ce (10g)

~~35~~

$G\ 852\,\bar{S} + 142\,PbCO_3 + 68\,Na_2CO_3$
$+ (284\,\bar{S} + 47\,PbCO_3)$
$+ 5g\,Na_2CO_3$

35. G (150g)

36 R. Too hard (Sep 20, '03)
37 R. Too hard (Sep 20, '03)

38 R. Too hard (Sep 20, '03); Chippy

39 Horribly chipped

41 Big ball OK. May be something in this
42. Too hard (Sept 20, '03)
43. Little too hard

✓36. 150 g G + 15 g Car (10%
✓37 125 G + 20 Car (16%)
✓38 125 G + 30 Car [illegible]
✓39 100 G + 30 Car (30%)
✓40 100 G + 40 Car (40%)
41. 50 G + 20 Mag [illegible]
✓42 G(~~130~~ 120) + Cer (6.0) (5%)
✓43. G (~~130~~ 120) + Cer (12) (10%)
✓44. ~~[illegible]~~ G (~~120~~ 110) + Cer (~~18~~ 16.5) (15%)
45 G (100) + Car (40) + Cer (10)

46 Too hard

H. 227g. $\bar{S}$ + 38g $PbCO_3$ + 18g K_2CO_3
(bar brick)

46. 100g (H) + 40g (Car) + ~~20~~ 10g (Cer)

~~47 100g (H) +~~

47 50g (H) + 20g (Car)

48 60g (H) + ~~2~~ 10g (Car)

49. Rough groove, [illegible], scratches only little more than refl. white?
50 Horribly chipped, yet big ball goes in?

I. $\bar{S}(200) + \bar{O}(100) + PbO(126)$
(correct not very good)
49. $I(150) + \bar{S}(8) + \bar{O}(4)$
50. $I(150\,g)$

J. $\bar{S}(200\,g) + \bar{O}(50) + PbO(105\,g)$

K. $\bar{S}(200) + \bar{O}(100) + PbO(113.5)$
51. $K(150\,g)$
K white cer, with Cer, or Cer + Cer. N.g.
L. $\bar{S}(200) + O(100) + Pb(94.5)$
N.g.

52R. Too hard (Agp 20)
53. Jumps, rather hard, good surface, scratches
shade more than regular, crackles
54. Fair; rougher surface than regular –
55R. Too hard (Agp 20)
56R. Something in it; crackles; scratches about
same as reg. white, possibly less.
57. Too hard, jumps out.
58. Horribly chippy
59 ~~#~~ " "

61R. Too hard (Agp 20).

52. 120g (11) + 6g (Cer)
53. 125g (11) + 12g (Cer)
54. 110g (11) + 16.5g (Cer)
55 120g (11) + 8.5 gm (Cer)
56 120g (11) + 9.5 " (Cer)
57 150g (11) + 15g (car)
58 125g (11) + 20g (car)
59 125g (11) + 30g (car)
60 100g (11) + 30g (car)
61 75g (11) + 20g (car) + 10 (Bees)
62 ~~Wht + Bees~~
$PbS_2 + 2\bar{S}$ (from litharge)

M: $170 (\bar{S}) + 37.5 (PbCO_3) +$
$35.5 (Mn\bar{A}) + 20$ (Sper)

66. Chips horribly (Sep 20) ~~[illegible] scratch~~

68. Jumped out, don't scratch much; rough surf. (Cond.) Chippy, Sept. 20,
69. Rough cut, [illegible], real good, scratch more than vg.
70. Little scratch, but more than white, no chip, rougher surface & jumps out, Chips slightly (Sept 20)

72. Crystallized, N.G.

73. Better than white, best yet (Scratches little more than vg. white Sept. 20)
74. Smooth cut, little scratch, not so good as 73, no chip, jumps out (cracked very deep), real fine, cond.

Cast in succession of No. 3; hence No. 4 & No. 5 better (pretty long & stand quite hot, "liquid hot")

75 FF No1., No.2, No3., filtered twice through cloth & twice through filt. paper. (Scratches more than vg. white Sep 20)
75 F No4, No5 filtered twice through cloth, once through filt. paper, once through [illegible] paper. 75 No. 5 too hard

76 Cryst
77 Cryst. $\mathcal{L} = 100\bar{5} + 4.3$ LiOH
78 "
79 "
80. Cryst.
81 cryst.
82 Cryst.
83 "

63) 150 g (K) + 15 g. (Car) Cracked
64) 125 g (K) + 20 g (Car) "
65) 125 g (K) + 30 g (Car) "
66 150 g (I)
67 120 g (I) + 6 g. (Cer)
68 120 g (I) + 12 g. (Cer)
69 120 g (I) + 16.5 g (Cer) Slightly Cracked
70 125 g (11) + 12 g (L)
71 125 g (11) + 25 g (L)
72 100 g (11) + 40 g (L)

73 (100 g) ac. Pb. St (from Lit.) + 1 g LiOH
74 (100 g) " " +1.8 "
75 (100 g) " " +0.5 "
B73 (130 g) " " +1.3 "
76 37.5 g (11) + 30 g (L)
77 37.5 g (11) + 37.5 g (L)
78 25 g (11) + 50 g (L)
79 12.5 g (11) + 62.5 g (L)
80 62.5 g (11) + 6 g (L) + 7 g (Cer)
81 62.5 g (11) + 12.5 g (L) + 7.5 g (Cer)
82 62.5 g (11) + 20 g (L) + 7 g (Cer)
83 37.5 g (11) + 30 g (L) + 7 g (Cer)

84. Cryst
85 "
86 Cryst

$N = 500\ \bar{S} + 250\ PbCO_3$

87. N.G.
88. [illegible], n.g.
89. Rough, jumps out, n.g. Chippy (Sept. 20)
90. Moderately poor.
91. N.G.
92. N.G.
93. [illegible], jumps out, n.g.
94 Cryst.

96. Moderately poor
97. Repeat. Smooth groove, jumps out, wavy marks as good as reg. Mottled (Sept 20)
98. Chips out, n.g.

100 Cryst.
101. ~~Abov~~ Repeat. No jump no chip, but big ball cuts, not loud, scratches more than reg.) Sept. 20.
103. N.G.

104. Repeat

105. Not loud; can track deep Fair, scratch & shade more than reg. Loud! (Sept. 20)
106. N.G.

84 37.5g (11) 37.5g (L) + 7.5 (Cer)
85 25g (11) 50g (L) + 7.5 (Cer)
86 12.5g (11) 62.5g (L) + 7.5 (Cer)
87 62.5g (N) 6 g (L)
88 62.5g (N) 12.5g (L)
89 50 g (N) 20 g (L)
90 37.5g (N) 30 g (L)
91 37.5g (N) 37.5g (L)
92 25 g (N) 50 g (L)
93 12.5g (N) 62.5g (L)
94 62.5g (N) 6 g (L) 7g (Cer)
95 62.5g (N) 12.5g (L) 7.5g (Cer)
96 62.5g (N) 20. g (L) 7 g (Cer)
97 37.5g (N) 30. g (L) 7 g (Cer)
98 37.5g (N) 37.5g (L) 7.5g (Cer)
99 25. g (N) 50 g (L) 7.5g (Cer)
100 12.5 g (N) 62.5g (L) 7.5g (Cer)
101 $\bar{S}$ (2) + $PbCO_3$ (1) (gray)
102 (101) + Cer (5%)
103 " " 10
104 " " 15
105 " " 20
106 " " 25

551 551

107. N. G.
$O = (4\bar{S} + 1\,PbCO_3) + 1\%$ LiOH.
108. Something in it (Sep 20 '03)
110. Grooves smooth as Sg.; jumps out –
111 May be something in it

113. Filtered twice through cloth, once through f.p., & once through bamboo paper; mould quite hot; liquid 140°

114. Tracks light; jumps out.
115. Big ball OK. Tracks very deep; rougher ~~wave~~ surface than Sg. white; no chip; something in it; scratches little more than Sg.
116 too hard

107. S(50) + LiOH(.5) + Cer(5)
108. 60g (O) + 3g (Cer)
109. 60g (O) + 6g (Cer)
110. 50g (O) + 7.5g (Cer)
111 50g (O) + 10g (Cer)
112 50g (O) + 12.5g (Cer)
113. 100$\bar{S}$ + 2 Lith

~~N = 500 $\bar{S}$ + 250 $PbCO_3$~~
P = 500 $\bar{S}$ + 12.5 $PbCO_3$
Q = 568 $\bar{S}$ + 133.5 $PbCO_3$
R = 568 $\bar{S}$ + 100 $PbCO_3$
S = 500 $\bar{S}$ + 62.5 $PbCO_3$
T = 500 $\bar{S}$ + 98 $PbCO_3$
U = 500 $\bar{S}$ + 30 $PbCO_3$

114. P.
115 P(70) + Cer(3.5)
116 P(70) + Cer(7)
117 P(70) + Cer(14)

PL = ~~24~~240P + 1.2 LiOH

118 PL(70) + Cer(3.5)
119 PL(70) + Cer(7)
120 PL(70) + Cer(14)

121. Waves coarser than sty. Jumps
122 N.G.
123. N.G., tears

124 Mottled wave marks fine, light track, jumps
125. Jumps, Rougher groove than sty.
126. Rough groove; jumped out.
127 Rougher than sty., jumps, is harder & tracks lighter than sty.
128. N.G.
129. Wave marks as fine as sty, tracks lighter, jumps out
130 Cryst. Grooves rougher than sty. very little jump.

132. Waves not so smooth as sty., jumps out.
133. Grooves rougher than sty., not jumped out; Fred tracked deeper
135. No jump, no chip, on verge of jumping, tracks lighter than (134)
134. Crystallized

121 Q (70g) + Cer (3.5g)
122 Q (70g) + Cer (7g)
123 Q (70g) + Cer (14g)

Q.L. = 300 Q + 1.5 (L.)
124 Q.L. (70g) + Cer (3.5g)
125 " (70g) + " (7g)
126 " (70g) + " (14g)
127 Q.L. alone

128 R. alone
129 R (70g) + Cer (3.5g)
130 R (70g) + " (7g)
131 R (70g) + " (14g)

R.L = 300 R + 1.5 L.
132 R.L (70g) + Cer (3.5g)
133 " (70g) + " (7g)
134 " (70g) + " (14g)
135 R.L alone

136. Reg + 1% X.
137 " + 2% x
138 " + 5% x
139 " +10% x
140 S" alone
141 S (70g) + Cer (3.5g)
142 S (70g) + Cer (7g)
143 S (70g) + Cer (14g)
1 SL = (225g) S + L (1.1g)
144 S.L. (70g) Cer (7g)
145 SL (70g) Cer (14g)
146 SL (70g)

147 T alone
148 T (70g) + Cer (3.5g)
149 T (70g) + Cer (7g)
150 T (70g) + Cer (14g)
T.L. = (270g) T + (1.4g) L.
151 TL (70g) + Cer (3.5g)
152 TL (70g) + Cer (7g)
153 TL (70g) + Cer (14g)
154 TL alone

U = 500

Myr + $PbCO_3$ (25g + 10g) — N.G (reduction).
[illegible] for [illegible] N. G.

159 Cracked N. G.

VII

155 – U (70g) + W Car (28g)
156 U (70g) + Bees (28g)
157 U (70g) + Myr (28g)
158 U (40g) + W Car (40g)
159 U (70g) + Cer (7g)
160 U (50g) + L (1g) + W Car (30g)

I 426 $\bar{S}$ + 60 $\overset{+}{Pb}$ + 27.5 $\overset{+}{Na}$ —
II 426 $\bar{S}$ + 50 $\overset{+}{Pb}$ + 27.5 $\overset{+}{Na}$
III 426 $\bar{S}$ + 40 $\overset{+}{Pb}$ + 27.5 $\overset{+}{Na}$ } NG cmpt.
IV 426 $\bar{S}$ + 30 $\overset{+}{Pb}$ + 27.5 $\overset{+}{Na}$
V 426 $\bar{S}$ + 20 $\overset{+}{Pb}$ + 27.5 $\overset{+}{Na}$ —
VI 426 $\bar{S}$ + 10 $\overset{+}{Pb}$ + 27.5 $\overset{+}{Na}$
VII 426 $\bar{S}$ + 70 $\overset{+}{Pb}$ + 20 $\overset{+}{Na}$
VIII 426 $\bar{S}$ + 70 $\overset{+}{Pb}$ + 15 $\overset{+}{Na}$ } NG cmpt.
IX 426 $\bar{S}$ + 70 $\overset{+}{Pb}$ + 10 $\overset{+}{Na}$
X 426 $\bar{S}$ + 70 $\overset{+}{Pb}$ + 5 $\overset{+}{Na}$ —

161 75 (I)
162 70 (I) + 3.5 Cer
163 70 (I) + 7 Cer
164 70 (I) + 14 Cer
165 70 (I) + 7 Bees
166 70 (I) + 14 Bees

167 75 (V)
168 70 (V) + 3.5 Ca
169 70 (V) + 7 Ca
170 70 (V) + 14 Ca
171 70 (V) + 7 Bas
172 70 (V) + 14 Bas
173 75 (X)
174 70 (X) + 3.5 Ca
175 70 (X) + 7 Ca
176 70 (X) + 14 Ca
177 70 (X) + 7 Bas
178 70 (X) + 14 Bas
✓ 179 568 $\overline{S}$ + 5.3 Na (4?)
✓ 180 100 (g 179) + 1 (h)
✓ 181 150 (g 179) + 3 (h)
✓ 182 150 (g 179) + 6 (h)
✓ 183 [illegible]
✓ 184 100 $\overline{S}$ + 7 (h)
✓ 185 100 $\overline{S}$ + 8.5 (h) (not quite all taken up)
✓ 186 100 $\overline{S}$ + 8.5 (h) (complete)
✓ 187 150 $\overline{S}$ + 12 (h)

12
70
910
905

(×1.3)

+ K [illegible]

XXI. 758.8 $\bar{S}$ + 310.5 $PbCO_3$ + 11.7 K_2CO_3
XXII. 780.5 $\bar{S}$ + 276 $PbCO_3$ + 23.5 K_2CO_3
XXIII. 803.5 $\bar{S}$ + 241.5 " + 35 "
XXIV. 826.5 $\bar{S}$ + (207 " + 47 K_2CO_3)
XXV. 849 $\bar{S}$ + (172.5 " + 58.5 "
XXVI. 871 $\bar{S}$ + (138 " + 70) "
XXVII. 894.5 $\bar{S}$ + (103.5 " + 82 "
XXVIII. 917.5 $\bar{S}$ + 69 " + 93.5 "
XXIX. 940 $\bar{S}$ + (34.5 " + 105.5) "

XXI. ~~Nothing~~ All pretty bad (XXI + 10% $\bar{S}$) best, called XXI A.

XXIII (+10% $\bar{S}$), (+15% $\bar{S}$), (+20% $\bar{S}$) good, much better than XXIII alone; XXIII + 10% $\bar{S}$ seems best, — marked XXIII A.

XXIV (+10% $\bar{S}$) (+20% $\bar{S}$) (+30% $\bar{S}$) pretty good; (+20% $\bar{S}$) best, called XXIV A. (But crystal??)

XXV (+20% $\bar{S}$) best, called XXV A. Others N.G.

XXVI (+10% $\bar{S}$ tolerable " XXVI A. " "

XXVII (+5% $\bar{S}$), (+10% $\bar{S}$) tolerably good; (+10% $\bar{S}$) shade better, called XXVII A

XXVIII. All pretty poor. (XXVIII + 10% $\bar{S}$) best, called XXVIII A.

XXIX. All pretty poor. XXIX used alone.

(XVII with diff. prop. of $\bar{S}$ - n.g.)

XI 757.8 $\bar{S}$ + 310.5 $PbCO_3$ + 9 Na_2CO_3
XII 780.6 $\bar{S}$ + 276 " + 18 "
XIII 803.4 $\bar{S}$ + 241.5 " + 27 "
XIV 826.2 $\bar{S}$ + 207 " + 36 "
XV 849 $\bar{S}$ + 172.5 " + 45 "
XVI 871.8 $\bar{S}$ + 138 " + 54 "
XVII 894.5 $\bar{S}$ + 103.5 " + 63 "
XVIII 917.4 $\bar{S}$ + 69 " + 72 "
XIX 940.2 $\bar{S}$ + 34.5 " + 81 "
XX 1704 $\bar{S}$ + 159 $\overset{+}{Na}$
188 70 (XI) + $\bar{S}$ (5) (3.5) ✓
189 70 (XI) + $\bar{S}$ (10) (7) ✓
190 65 (XI) + $\bar{S}$ (~~20~~) ~~[illegible]~~ (11) ✓ ✓
191 70 (XI) + Cer (3.5) ✓
192 70 (XI) + Cer (7) ✓
193 65 (XI) + Cer (10.0) ✓
194 65 (XI) + Cer (6.5) + $\bar{S}$ (6.5) ✓ ✓
195 70 (XI) + Sperm (7)
196 65 (XI) + Sperm (10)
197 70 (XI) + Bees (7)
198 70 (XI) + M.W. (7)
199 70 (XI) + Chin (7)
200 65 (XI + Chin (10)

201 70 (XII) + 3.5 $(\bar{S})$

202 70 (XII) + 7 $(\bar{S})$

203 65 (XII) + 11 $(\bar{S})$

204 70 (XII) + 3.5 (Cer)

205 70 (XII) + 7 (Cer)

206 65 (XII) + 10 (Cer)

207 65 (XII) + 6.5 (Cer) 6.5 $(\bar{S})$

208 70 (XII) + 7 ([illegible])

209 65 (XII) + 10 (Sheri)

210 70 (XII) + 7 (Bus)

211 70 (XII) + 7 (M.W.)

212 70 (XII) + 7 (Bhim)

213 65 (XII) + 10 (Bhim)

214 200 $(\bar{S})$ + 14 (Li) + 16.5 $PbCO_3$ (high temp)

215 70 (XIII) + 3.5 $(\bar{S})$

216 70 (XIII) + 7 $(\bar{S})$

217 65 (XIII) + 11 $(\bar{S})$

218 70 (XIII) + 3.5 (Cer)

219 70 (XIII) + 7 (Cer)

220 65 (XIII) + 10 (Cer)

221 65 (XIII) + 6.5 $(\bar{S})$ + 6.5 (Cer)

222 70 (XIII) + 7 (Spiri)

223 65 (XIII) + 10 (Spur)

224 70 (XIII) + 7 (Bus)

225 70 (XIII) + 7 (M W)

226 70 (XIII) + 7 (Chin)
227 65 (XIII) + 10 (Chin)
228 70 (XIV) + 3.5 (S̄)
229 70 (XIV) + 7 (S̄)
230 65 (XIV) + 11 (S̄)
231 70 (XIV) + 3.5 (Cer)
232 70 (XIV) + 7 (Cer)
233 65 (XIV) + 10 (Cer)
234 65 (XIV) + 6.5 (S̄) + 6.5 (Cer)
235 70 (XIV) + 7 (Speri)
236 65 (XIV) + 10 (Speri)
237 70 (XIV) + 7 (Bio)
238 70 (XIV) + 7 (M.W.)
239 70 (XIV) + 7 (Chin)
240 65 (XIV) + 10 (Chin)
241 70 (XV) + 3.5 (S̄) -
242 70 (XV) + 7 (S̄) -
243 65 (XV) + 11 (S̄) -
244 70 (XV) + 3.5 (Cer) -
245 70 (XV) + 7 (Cer) -
246 65 (XV) + 10 (Cer) -
247 65 (XV) + 6.5 (S̄) 6.5 (Cer) -
248 70 (XV) + 7 (Speri) -
249 65 (XV) + 10 (Speri) -
250 70 (XV) + 7 (Bio)

251 70 (XVI) + 7 (M.W.)
252 70 (XVI) + 7 (Chin)
253 65 (XVI) + 10 (Chin)
254 70 (XVI) + 3.5 (S̄)
255 70 (XVI) + 7 (S̄)
256 65 (XVI) + 11 (S̄)
257 70 (XVI) + 3.5 (Ci)
258 70 (XVI) + 7 (Ci)
259 65 (XVI) + 10 (Ci)
260 65 (XVI) + 6.5 (S̄) + 6.5 (Ci)
261 70 (XVI) + 7 (Spiri)
262 65 (XVI) + 10 (Spiri)
263 70 (XVI) + 7 (Bis)
264 70 (XVI) + 7 (Bi. Ch.)
265 70 (XVI) + 7 (Chin)
266 65 (XVI) + 10 (Chin)
267 70 (XIX) + 3.5 (S̄)
268 70 (XIX) + 7 (S̄)
269 65 (XIX) + 11 (S̄)
270 70 (XIX) + 3.5 (Ci)
271 70 (XIX) + 7 (Ci)
272 65 (XIX) + 10 (Ci)
273 65 (XIX) + 6.5 (S̄) + 6.5 (Ci)
274 70 (XIX) + 7 (Spiri)
275 65 (XIX) + 10 (Spiri)

276 70 (XIX + 7
277 70 (XIX
278 70 (XIX 7
279 65 (XIX
280 70 (XXII) + 3.5 (S̄)
281 70. (XXII) + 7 (S̄) Chippy Blow Holes
282 65 (XXII) + 11 (S̄) Chippy Blow Holes
283 70 (XXII) + 3.5 (Cer) " " "
284 70 (XXII) + 7 (Cer) N.G. Cryst.
285 65 (XXII) + 10 (Cer) N.G. Cryst.
286 65 (XXII) + 6.5 (S̄) + 6.5 (Cer)
287 70 (XXII) + 7 (Spuri) N.G. crystalized
288 65 (XXII) + 10 Spuri) Ditto
289 70 (XXII) + 7 (Bees)
290 70 (XXII) + 7 (M. O.)
291 70 (XXII) + 7 (Chun)
292 65 (XXII) + 10 (Chun)
~~29 70 (XXIII) + 3.5 (S̄)~~ 293. 70 (XXIII^A) + 7 (S̄)
~~29 70 (XXIII) + 7 (S̄)~~
~~29 65 (XXIII) + 11 (S̄)~~
A 294 70 (XXIII^A) + 3.5 (Cer)
A 295 70 (XXIII^A) + 7 (Cer)
A 296 65 (XXIII^A) + 10 (Cer)
A 297 65 (XXIII^A) + 6.5 (S̄) 6.5 (Cer)
A 298 70 (XXIII*) + 7 Spuri

CLOL is coconut oil ± saponif., acids neutralised with pure PbO according to Allen ("maximum for KOH"). [100 g acids + 52 g PbO).

CP : 100 g acids from coconut oil, heated at 230 °C, losing 20 g. in weight.

+299 65 (XXIA) + 10 (Sferi)
A 300 70 (XXIA) + 7 (Bees)
A 301 70 (XXIA) + 7 (M. Gl.)
A 302 70 (XXIA) + 7 ([illegible])
A 303 65 (XXIA) + 10 (Chem)
304 70 (XXIA) + 7 (S̄)
305 70 (XXIA) + 3.5 (Cer)
306 70 (XXIA) + 7 (Cer)
307 65 (XXIA) + 10 (Cer)
308 65 (XXIA) + 6.5 (S̄) + 6.5 (Cer)
309 70 (XXIA) + 7 (Sferi)
310 65 (XXIA) + 10 (Sferi)
311 70 (XXIA) + 7 (Bees)
312 70 (XXIA) + 7 (M. Gl.)
313 70 (XXIA) + 7 (Chem)
314 65 (XXIA) + 10 ([illegible])
315 135.5 CLOL + 10 (Cer) + 20 (11)
316 80 g CP + 40 g PbO (CP)
317 70 (XXIA) + 7 (S̄)
318 70 (XXIA) + 3.5 (Cer)
319 70 (XXIA) + 7 (Cer)
320 65 (XXIA) + 10 (Cer)
321 65 (XXIA) + 6.5 (Cer) + 6.5 (S̄)
322 70 (XXIA) + 7 (Sferi)
323 65 (XXIA) + 10 (Sferi)

324 70 (XXIV) + 7 (Bus)
325 70 (XXIVA) + 7 (Mn. Ot.)
~~226 70 (XXIVA) + 7 (Chin)~~
~~227 65 (XXIV) + 10 (Chin)~~
~~228~~
326. 63.5 ($\overline{\text{XXIV}}$) + 6.5 ($\overline{S}$) + 7 (Chin)
327 59 ($\overline{\text{XXIV}}$) + 6 ($\overline{S}$) + 10 (Chin)
328 63.5 ($\overline{\text{XXIV}}$) + 6.5 ($\overline{S}$) + 7 (Cer)
329 ~~[illegible]~~ 59 ($\overline{\text{XXIV}}$) + 6 ($\overline{S}$) + 10 (Cer)
330. 100 $\overline{S}$ + 21 PbO (cp) + 1 (Lox)
331 (XXVA) 70 + 7 ($\overline{S}$)
332 (XXVA) 70 + 3.5 (Cer)
333 (XXVA) 70 + 7. (Cer)
334 (XXVA) 65 + 10 (Cer)
335 (XXVA) 65 + 6.5 (Cer) 6.5 ($\overline{S}$)
336 (XXVA) 70 + 7 (Spuri)
337 (XXVA) 65 + 10 (Spuri)
338 (XXVA) 70 + 7 (Bus)
339 (XXVA) 70 + 7 (Mn. Ot.)
340 (XXVA) 70 + 7 (Chin)
341 (XXVA) 65 + 10 (Chin)
342 100 (ac. from coconut oil, previously heated ~~at~~ 160°) + 45 (PbO cp.)

343	(XXVIA)	70 +	($\bar{S}$)	7	
344	(XXVI A)	70 +	(Cer)	3.5	
345	(XXVI A)	70 +	(Cer)	7	
346	(XXVI A)	65 +	(Cer)	10	
347	(XXVI A)	65 +	(Cer)	6.5 + ($\bar{S}$)	6.5
348	(XXVI A)	70 +	(Speri)	7	
349	(XXVI A)	65 +	(Speri)	10	
350	(XXVI A)	70 +	(Bees)	7	
351	(XXVI A)	70 +	(M. H.)	7	
352	(XXVI A)	70 +	(Chin)	7	
353	(XXVI A)	65 +	(Chin)	10	
354✓	(XXVIIA)	70 +	($\bar{S}$)	7	
355	(XXVIIA)	70 +	(Cer)	3.5	
356	(XXVIIA)	70 +	(Cer)	7.	
357	(XXVIIA)	65 +	(Cer)	10	
358	(XXVIIA)	65 +	(Cer)	6.5 + ($\bar{S}$)	6.5
359	(XXVIIA)	70 +	(Speri)	7	
360	(XXVIIA)	65 +	(Speri)	10	
361	(XXVIIA)	70 +	(Bess)	7	
362	(XXVIIA)	70 +	(M. H.)	7	
363	(XXVIIA)	70 +	(Chin)	7	
364	(XXVIIA)	65 +	(Chin)	10	

EDWIN DYER
ORANGE, N.J.

365 (XXVIIIA) 70 + ($\bar{S}$) 7
366 (XXVIIIA) 70 + (Cer) 3.5
367 (XXVIIIA) 70 + (Cer) 7
368 (XXVIIIA) 65 + (Cer) 10
369 (XXVIIIA) 65 + ($\bar{S}$) 6.5 + (Cer) 6.5
370 (XXVIIIA) 70 + (Speri) 7
371 (XXVIIIA) 65 + (Speri) 10
372 (XXVIIIA) 70 + (Bees) 7
373 (XXVIIIA) 70 + (M.W.) 7
374 (XXVIIIA) 70 + (Chin) 7
375 (XXVIIIA) 65 + (Chin) 10
376 Acids from cocoanut oil (80g), heated at 150°, + PbO cp. (33g.)
377 German wax, cast at Mr. Edison's request.
378 (XXIX) 70 + ($\bar{S}$) 7
379 (XXIX) 70 + (Cer) 3.5
380 (XXIX) 70 + (Cer) 7
381 (XXIX) 65 + (Cer) 10
382 (XXIX) 65 + ($\bar{S}$) 6.5 + (Cer) 6.5
383 (XXIX) 70 + (Speri) 7
384 (XXIX) 65 + (Speri) 10
385 (XXIX) 70 + (Bees) 7
386 (XXIX) 70 + (M.W.) 7
387 (XXIX) 70 + (Chin) 7
388 (XXIX) 65 + (Chin) 10

$\overline{\underline{\text{XXX}}}$	955 $\bar{S}$ +	74.5 Li +	34.5 $PbCO_3$
$\overline{\underline{\text{XXXI}}}$	930 $\bar{S}$ +	66 " +	69 "
$\overline{\underline{\text{XXXII}}}$	905.5 " +	58 " +	103.5 "
$\overline{\underline{\text{XXXIII}}}$	881 " +	50 " +	138 "
$\overline{\underline{\text{XXXIV}}}$	856 " +	41.5 " +	172.5 "
$\overline{\underline{\text{XXXV}}}$	831 " +	33 " +	207 "
$\overline{\underline{\text{XXXVI}}}$	806.5 " +	25 " +	241.5 "
$\overline{\underline{\text{XXXVII}}}$	781.5 " +	16.5 " +	276 "
$\overline{\underline{\text{XXXVIII}}}$	757 " +	8.5 " +	310.5 "

Amts of $\bar{S}$ used with the above (B stands for base):
(a) 20 B + 1 $\bar{S}$; (b) 18 B + 2 $\bar{S}$, (c) 20 B + 4 $\bar{S}$.
(d) 14 B + 6 $\bar{S}$; (e) 12 B + 8 $\bar{S}$, (f) 11.5 B + 8.5 $\bar{S}$;
(g) 10 B + 10 $\bar{S}$; (h) 8 B + 12 $\bar{S}$, (i) 6 B + 14 $\bar{S}$;
(j) 2 B + 18 $\bar{S}$, (k) 1 B + 20 $\bar{S}$.

$\overline{\underline{\text{XXX}}}$ alone: structure pretty fine; cryst. in centre. Mp.

$\overline{\underline{\text{XXX}}}$ a grain very fine, no crystallization on butter plate. Mp.

$\overline{\underline{\text{XXX}}}$ b. Grain not so fine as preceding; cryst on butter plate. Mp

$\overline{\underline{\text{XXX}}}$ c. N.G.

XXX d, N.G. Prolonged heating on Butler plate causes no improvement.

XXX e. N.G.

XXX f. N.G.

XXX g. N.G.

XXX h. N.G.

XXX i. N.G.

XXX j~~k~~. Uniform, smaller crystals than $\bar{S}$, dry, ~~&~~ soft cut on chilled surface.

XXX k. Similar to preceding.

XXXI, alone. Grain quite good, sup.

XXXI a. Grain about same as preceding, but ~~so~~ some cryst. in centre, sup.

XXXI b. Much crystallization, sup.

XXXI c. N.G.

XXXI d. N.G.

XXXI e. N.G.
XXXI f. N.G.
XXXI g. N.G.
XXXI h. N.G.
XXXI i. Almost uniform crystallization
XXXI j. Unif. cryst., smaller crystals than S.
XXXI K. Very similar to preceding.

XXXII, alone. N.G.
XXXII a. Pretty bad crystallization; grain in chilled surface not very good.
XXXII b. N.G.
XXXII c. N.G.
XXXII d. N.G.
XXXII e. N.G.
XXXII f. N.G.
XXXII g. Almost uniform; cryst.
XXXII h. Similar to preceding (better)
XXXII i. Still better

XXXII j. Uniform, crystalline
XXXII k. Same -

XXXIII alone. Excellent - Mp.
XXXIII a. Same. Mp.
" b Pretty good Mp.
" c Cryst. in centre. Good on bottom chilled surface -
" d N. G.
" e N. G.
" f N. G.
" g N. G.
" h Cryst., almost uniform
" i Same -
" j Cryst. uniform.
" K Same.

XXXIV, alone: Rough grain. mp.

XXXIV a. Much better grain mp.
" b Very good grain mp.
" c ~~A. C~~ Much cryst. mp.
" d Much better, no cryst.
" e Same.
" f Uniform, cryst?
" g " fine crystals
" h " larger "
" i Same
" j Same
" k Same

XXXV, alone – Very rough grain

" a Slightly better, but cryst in clusters

" b Very rough grain.

" c N. G

" d Very much better; very slight cryst.

" e Same; not cryst.

" f Same

" g Pretty good

" h missing ~~Cryst., Much worse~~

" i Much worse; cryst.

" j Unif. cryst.

" K Same.

XXXVI, alum: N. G.

"	a	Very rough grain
"	b	Rough grain
"	c	Somewhat better
"	d	Excellent grain
"	e	Good grain (striated)
"	f	Same
"	g	Same
"	h	Considerably striated
"	i	Rough grain
"	j	Uniformly cryst.
"	k	Same

XXXVII, alone : Pretty rough grain

" a Somewhat better

" b Pretty good

" c A little better

" d Same

" e Quite good

" f Same

" g Striated

" h Rougher

" i Striated, but Excellent in chilled part.

j Crisp.

" K N. G.

XXXVIII, alone: N.G.

" a Same

" b very Rough grain

" c Better

" d Still better, but striated

" e Rough

" f Same

" g Cryst. in centre, striated
but pretty good in chilled parts

" h Almost same

" i Striated, cryst.
(Chilled surface?)

" j Cryst

" k Cryst.

389	(XXXa)	70		
390	(XXXa)	70 +	(Cer)	3.5
391	(XXXa)	70+	(Cer)	7
392	(XXXa)	65+	(Cer)	10
393	(XXXa)	65+	(Cer)	6.5+($\bar{5}$) 6.5
394	XXXa	70+	(Speri)	7
395	XXXa	65+	(Speri)	10
396	XXXa	70 +	(Bus)	7
397	XXXa)	70+	(M.Sk.)	7
398	(XXXa)	70 +	(Chin)	7
399	(XXXa)	65+	(Chin)	10
400	(XXXIa)	70		
401	(XXXXa)	70 +	(Cer)	3.5
402	(XXXIa)	70 +	(Cer)	7
403	(XXXIa)	65+	(Cer)	10
404	(XXXIa)	65+	(Cer)	6.5+($\bar{5}$) 6.5
405	(XXXIa)	70+	(Speri)	7
406	(XXXIa)	65+	(Speri)	10
407	(XXXIa)	70+	(Bus)	7
408	(XXXIa)	70+	(M.Sk.)	7
409	(XXXXa)	70+	(Chin)	7
410	(XXXIa)	65+	(Chin)	10
411	(XXXIa)	70+	(Bar)	7

~~412 (XXXII i) 70~~
~~413 (XXXII i) 70 + (Cer) 3.5~~
~~414 (XXXII i) 70 + (Cer) 7~~
~~415 (XXXII i) 65 + (Cer) 10~~
~~416 (XXXII i) 65 + (Cer) 6.5~~
~~417 (XXXII i) 70 + (Sferi) 7~~
~~418 (XXXII i) 65 + (Sferi) 10~~
~~419 (XXXII i) 70 + (Bers) 7~~
~~420 (XXXII i) 70 + (M. A.) 7~~
~~421 (XXXII i) 70 + (Chin) 7~~
~~422 (XXXII i) 65 + (Chin) 10~~
~~423 (XXXII i) 70 + (Car) 7~~

Base ~~XXXII~~ 6.5
given up
N. G.

412 (XXXIII a) 70
413 (XXXIII a) 70 + Car 3.5
414 (XXXIII a) 70 + Car 7
415 (XXXIII a) 65 + (Car 10
416 (XXXIII a) 65 + (Car 6.5 + ($\bar{5}$) 6.5
417 (XXXIII a) 70 + (Sferi 7
418 (XXXIII a) 65 + (Sferi 10
419 (XXXIII a) 70 + (Bers) 7
420 (XXXIII a) 70 + (M. A.) 7
421 (XXXIII a) 70 + (Chin) 7
422 (XXXIII a) 65 + (Chin) 10
423 (XXXIII a) 70 + (Car) 7

Base B_0 = 4550 $\bar{B}$ + 945 Pt. C.
" B_1 = 1m B_0 + 5 Li O H
" B_2 = " " + 10 Li OH.
" B_3 = " " + 9 Li O.B.
" B_4 = " " + 8 Li C.St.
" B_5 = " " + 3 Li C.H.

424	(B_0)	70		
425	(B_0)	70 +	1	ricinoleic acid
426	(B_0)	70 +	3	" "
427	(B_0)	70 +	1	par. oil
428	(B_0)	70 +	3	" "
429	(B_0)	70 +	1	pyridine
430	(B_0)	70 +	3	"
431	(B_0)	65 +	6.5	M. St.
432	(B_0)	60 +	12	" "
433	(B_0)	50 +	20	" "
434	(B_0)	60 +	10	Ceres
435	(B_0)	63 +	.7	Lauric Acid
436	(B_1)	70		
437	(B_1)	70 +	1	ricinoleic
438	(B_1)	70 +	3	"
439	(B_1)	70 +	1	par oil
440	(B_1)	70 +	3	" "
441	(B_1)	70 +	1	pyridine
442	(B_1)	70 +	3	"
443	(B_1)	65 +	6.5	M. St.
444	(B_1)	60 +	12	" "
445	(B_1)	50 +	20	" "
446	(B_1)	70 +	1	Ker
447	(B_1)	70 +	3	"
448	(B_1)	65 +	5	Ceres

449 (B_1) 60 + 10 Ceres
450 (B_1) 50 + 20 "
~~(B_1) 63 + 7 Lauric~~ no Base left to make this one
451 (B_2) 70
452 (B_2) 70 + 1 rici
453 (B_2) 70 + 3 "
454 (B_2) 70 + 1 Par oil
455 (B_2) 70 + 3 " "
456 (B_2) 70 + 1 Pyri
457 (B_2) 70 + 3 "
458 (B_2) 70 + 1 Ster
459 (B_2) 70 + 3 "
460 (B_2) 65 + 6.5 Mn. Ol.
461 (B_2) 60 + 12 " "
462 (B_2) 50 + 20 " "
463 (B_2) 65 + 5 Ceres
464 (B_2) 60 + 10 "
465 (B_2) 50 + 20 "
~~466 (B_2) 63 + 7 Lauric acid~~ no Base left to make this one
466 B_3 70
467 B_3 70 + 1 Rici
468 B_3 70 + 3 "
469 B_3 70 + 1 Par. oil
470 B_3 70 + 3 " "
471 B_3 70 + 1 Pyri
472 B_3 70 + 3 "

473 B_3 70 + 1 Ker.
474 B_3 70 + 3 ″
475 B_3 65 + 6.5 M. Ol.
476 B_3 60 + 12 ″ ″
477 B_3 50 + 20 ″ ″
478 B_3 65 + 5 Cires
479 B_3 60 + 10 ″
480 B_3 50 + 20 ″
481 $(\bar{S})$ 100 + 21 $(\overset{+}{B}_4)$ + 0.5 (Li in solution)
482 $(\bar{S})$ 100 + 21 $(\overset{+}{B}_4)$ + 0.5 (Li solid)
483 $(\bar{S})$ 100 + 21 $(\overset{+}{B}_4)$ + 1 (Li in (solution))
484 $(\bar{S})$ 100 + 21 $\overset{+}{B}_4$ + 1 (Li solid)
485 Car 8 + 72 M. Ol.
486 Car 24 + 56 M. Ol.
487 Car 40 + 40 M. Ol.
~~488 Car 56 + 24 M. Ol.~~ } did not cast
~~489 Car 72 + 8 M. Ol.~~ } there too much shrinkage
488 (B_4) 70
489 (B_4) 70 + 1 Rice
490 (B_4) 70 + 3 ″
491 (B_4) 70 + 1 Par oil
492 (B_4) 70 + 3 ″
493 (B_4) 70 + 1 Pyri
494 (B_4) 70 + 3 ″
495 (B_4) 70 + 1/2 Ker

Stearate bases:

No. 1 400 $\bar{S}$ + 260 Na_2CO_3 + 12 kg. H_2O

No. 2 400 $\bar{S}$ + 520 " + "

No. 3 " + 1000 " + "

496 B_4 70 + 3 Ker.

97 B_4 65 + 6.5 M. Ph.

98 B_4 60 + 12 " "

99 B_4 50 + 20 "

500 B_4 65 + 5 Ceres

1 B_4 60 + 10 "

~~2 B_4 50 + 20~~ not enough to make a cast

2 B_5 70

3 B_5 70 + 1 Rici

4 B_5 70 + 3 "

5 B_5 70 + 1 Par. oil

6 B_5 70 + 3 " "

7 B_5 70 + 1 Pyri

8 B_5 70 + 3 "

9 B_5 70 + 1 Ker

0 B_5 70 + 3 "

11 B_5 65 + 6.5 M. Ph.

12 B_5 60 + 12 " "

13 B_5 50 + 20 " "

14 B_5 65 + 5 Ceres

15 B_5 60 + 10 "

16 B_5 50 + 20 "

17 B_5 63 + 7 Lauric acid

18 Reg. white softened by M. A. R. Solution

19 Na-Stearate base No 1. with alcohol

520. Na–S̄t base No.1 few bubbles
521. Same as 520, still fewer of bubbles.
522. Na S̄ base No.1 with excess of H_2O
523 " " No 2.
524 " " " with some alcohol.
525 Same as 524
526 "
527 Na S̄ base No 1. with considerable alcohol
528 Same as 527.
529 " " "
530 " " "
~~531~~ " " "
531 Na S̄. base No 1. with ~~considerable~~ alcohol
532 Na S̄ base No 1., cooling, many bubbles.
533 $\frac{\text{No 1}}{8}$ A
534 $\frac{\text{No 1}}{8}$ B
535 $\frac{\text{No 1}}{8}$ C.
536 $\frac{\text{No 2}}{5}$ A

537. $\frac{\text{No.2}}{5}$ B

538. $\frac{\text{No 2}}{5}$ C

539. $\frac{\text{No.1}}{10}$ A

540 $\frac{\text{No.1}}{10}$ B

541 $\frac{\text{No.1}}{10}$ C

542 $\frac{\text{No.3}}{1}$ A

543 $\frac{\text{No.3}}{1}$ B

544 $\frac{\text{No.3}}{1}$ C

545 $\frac{\text{No.3}}{1}$ D chicken

a = 18 base + $\overset{2}{\cancel{4}}$ $\bar{S}$; b = 16 base + 4 $\bar{S}$; c = 14 + 6
d = 12 + 8; e = 10 + 10; f = 8 + 12; g = 6 + 14;
h = 4 + 16; i = 2 + 18.

Zinc & Li bases.

I. 90 g Zn$\bar{S}$ + 10 g $\bar{S}$ + 8 LiOH
too chippy, glassy.

a. Pretty good; high m.p.
b. Slightly worse; much lower m.p.; dry cut, soft
c. N.G
d N.G
e. Cryst. Very good on chilled surface, quite deep in.
f. Much worse.
g. Rough grain, N.G.

II. 50 g Zn$\bar{S}$ + 50 g $\bar{S}$ + 4.0 g LiOH
pretty bad. high m.p.

a. Cryst. N.G.
b. N.G.
c. N.G
d. N.G
e. N.G.
f. N.G.
g. N.G.
h. N.G.
i. N.G.

III. 10g. $Zn\bar{O}$ + 90 $\bar{S}$ + 7.5 LiOH
N.C. (porous, powdery!)

a. N.C.
b. +C

Mg & Li bases.

I. 90 $\bar{S}$ + 10 Mg$\bar{S}$ + 7.5 LiOH
N. G.

a, b, & c N. G.

II. 80 $\bar{S}$ + 20 Mg$\bar{S}$ + 6.5 Li
N. G.

a. Chilling surface pretty good
b. N. G.
c & c, N. G.

III. 70 $\bar{S}$ + 30 Mg $\bar{S}$ + 6 LiOH
O.K.

IV. 60 $\bar{S}$ + 40 Mg $\bar{S}$ + 5 LiOH
~~[illegible]~~ Somewhat chippy O.K.

a. Cryst(?) not very bad
b. worse
c+e. N.G.

$\overline{V}$. 50 $\overline{S}$ + 50 Mg$\overline{S}$ + 4 Li
O.K.

a. O.K.
b. not quite so good
c.&c. N.G.

Transfer of No. $\overline{IV}$

$\overline{VI}$. 40 S + 60 MgS + 3.5 Li
glassy; Much worse
~~Sol., Excellent~~

a Excellent ✓
b good
c Much worse
d&c. N.G.

a. Perfectly transp.; chippy
b. Semi- " ; Excellent grain; chippy
c. Excellent ;
d. Cryst., &c. N.G.

VII. $30\bar{S} + 70\,Mg\bar{S} + 2.5\,Li$
Good fracture; ~~N.G.~~ chippy
a. Glassy; chippy
b - rough grain; chippy
c. N.G.
d. Excellent chilling surface
c+e. N.G.

VIII. $20\bar{S} + 80\,Mg\bar{S} + 1.5\,Li$
Good fracture. Glassy; chippy
a. Same
b - Coarse grain
c+e. N.G.

IX. $10\bar{S} + 90\,\mathrm{Mg}\bar{S} + .8\,\mathrm{LiOH}$

Hard, chippy, good fracture

a. Same

b. Transparent? otherwise same

c. Excellent chilled surface

d. Excellent

e. Excellent (com?)

f. Not quite as good

g. N. G.

546) 150 reg. m. + 1.5 No 1 Dope
547) 150 " " + 3 " " "
548) 150 " " + 4.5 " " "
549) 150 " " + 6 " " "
550) 150 " " + 7.5 " " "
551) 150 " " + 15 " " "
552) 150 " " + 30 " " "
553) 150 " " + 50 " " "
554) 150 " " + 1.5 No 2 Dope.
555) 150 " " + 3 " " "
556) 150 " " + 4.5 " " "
557) 150 " " + 6 " " "
558) 150 " " + 7.5 " " "
559) 150 " " + 15 " " "
560) 150 " " + 1.5 No 3 Dope
561) 150 " " + 3 " " "
562) 150 " " + 4.5 " " "
563) 150 " " + 6 " " "
564) 150 " " + 7.5 " " "
565) 150 " " + 15 " " "
566) 150 " " + 30 " " "
567) 150 " " + 50 " " "
568) 90 (11) + 10 L.R.
569) 80 " + 20 " "
570) 70 " + 30 " "
571) 60 " + 40 " "

572 50 (11) + 50 L.R.
573
574
575
576
577
578
579
580

[ITEM FOUND IN BOOK]

~~Dont~~

130 Dont jump out good qual. Scratches bad
40 jumps out little " "
X 30 Very loud dont jump out. Crackles + scratch
DR – scratches more than 27 – 1/2 as loud as X30
80 Scratches bad 3/4 of loud of X30
" " "
110 "
white wax 100-15 Gram Jumps out Dont scratch very much
120 – Dont jump out, loud Scratches bad
29 R – not loud, jumps out, scratch not great,
"
50 – Dont jump out
13 R – Very much less scratch than 27 – in fact scarcely hear it – its not loud –
AR Very little scratch jumps out little not quite so loud as 27 –

[ITEM FOUND IN BOOK]

140/65°

26 Jumps out, scratches more than 27/60° / 140

23 [illegible] jumps [illegible] some [illegible]

60 [illegible]

21 Scratches more than 27/60/140,
jumps out [illegible]

24 Jumps out, [illegible], scratches [illegible]

27 Scratches, [illegible] than 27/60/140

BR Scratches about same as 27/60/140,
apparently no jumping out.

[ITEM FOUND IN BOOK]

120° Angle 60° [illegible] T.

[illegible] 140° [illegible]

[illegible]

23 R [illegible]

21 Rough

24. Qual. good, [illegible]

26 Chips [illegible]

140° Angle 60°

13. No scratch, [illegible], qual. poor

27R Qual. good, slight continuous scratch, jumps out, probably want higher temp.

21. Scratch a little less than 27R. Qual. not so good, because jumped out more.

26. Qual. no good, jumps out, ~~qual~~ Scratch about same as 27

24. Jumps out, scratches more than 27.

[ITEM FOUND IN BOOK]

[illegible] 140°; [illegible], 60° 2,

23 Jumps out, scratches more than 27

30XE Good qual., crackles + scratch more than 27

40E ~~Goo~~ Same as 30X

130E Qual. Good, scratches very much more than 27.

BR Scratches about same as 27; but not so [illegible]

DR Scratches more than 27; jumps out, but [illegible]

110E Scratches more than 27.

* 40X Smooth under microscope. Scratch about same as 27; not so loud.

[ITEM FOUND IN BOOK]

[ON BACK OF PRECEDING PAGE]

207

267 : 223 :: 71 : x

1561

267) [illegible] = 59

2483

80

568

341

72

1704

426) 19312 = 45,3

2232

1420

426 : 59 :: 5681 : x

59

5112

[illegible]840

426) 3351[illegible] 7

[ITEM FOUND IN BOOK]

[illegible] white Temp. 140°, Angle 60° 3.

E 15 cm [illegible] R [illegible]

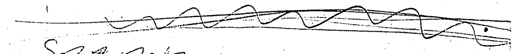
50 E Scratch [illegible] than [illegible] Jump [illegible]

120 E [illegible] jumps [illegible], [illegible]

50 E doesn't jump out, scratches very much more than 27

100 E Same as 50 E

90 E Terrible scratch, n.g.

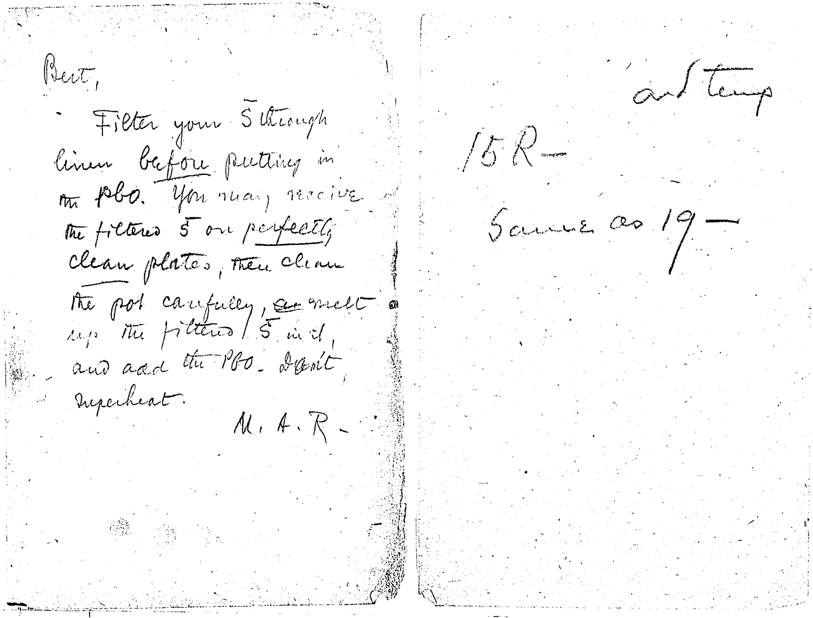


S~~cratch tests~~

29 R less scratch than 27, not so loud, not deep.

AR Jumps out. Scratches slightly more than 27.

[ITEM FOUND IN BOOK]



Bert,

Filter your $\bar{S}$ through linen *before* putting in the PbO. You may receive the filtered $\bar{S}$ on *perfectly clean* plates, then clean the pot carefully, ~~an~~ melt up the filtered $\bar{S}$ in it, and add the PbO. Don't superheat.

M. A. R.

and temp

15 R—

Same as 19—

[ITEM FOUND IN BOOK]

[ON BACK OF PRECEDING PAGE]

4500 950
5000

$$\begin{array}{r} 12 \\ \underline{70} \\ 840 \end{array}$$

.5
4.5

$\underline{\underline{900}}$

70) 800

I. $1000 B_0 + 5g$ LiOH $= B_1$

II. ~~900 B~~ $1000 B_0 + 1.0g$ LiOH $= B_2$

III $1000 B_0 +$ ~~6~~ $9g$. LiOH $= B_3$

IV $1000 B_0 + 8g$ LiOH $= B_4$

V $1000 B_0 + 3g$ LiOH $= B_5$

[ITEM FOUND IN BOOK]

17 R ord temp
Spongy one side - jumps out
Chips should be even
& taken 120 temp —

ord temp —
20 R -
Chips oil bad —
Wants 120 abt —

[ITEM FOUND IN BOOK]

Ord temp –

19R

Quality good –
Chips badly – one side
spongy – wants to be
taken 110 to 130 –
While jumped under micro
don't sound so –
Can be improved by
getting it even –

18R 95 deg
Ord Temp

One side spongy –
Slightly too draggy
If got even & not spongy
on one side – & not quite
so draggy it would be
good – Cant take at
higher temp than
normal –

[ITEM FOUND IN BOOK]

125 Temp

17 R = Scratches
Don't see why - good tone &
Loudness not so good as
16 R

125 Temp

19 R - Chipped out
wants slight refining
for 125 Temp

[ITEM FOUND IN BOOK]

Good, chips out, 16R to be taken at
120°F.

[ITEM FOUND IN BOOK]

---

125 Temp

15 R = one side chipped out - Cant tell abt scratch - it wants a little softening for 125 Temp

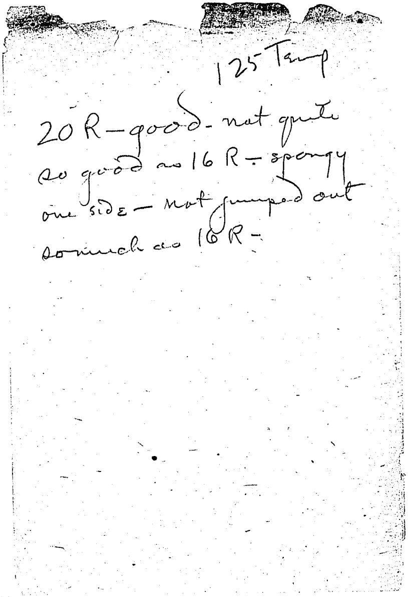
---

16 R is good 125

no scratch to amount to anything - its tracked deep & does not chip but, jumps out, the only question is Can it be tracked deep enough to prevent jumping out without chiping or scratching - I think it can -

Re try at 130 Temp

[ITEM FOUND IN BOOK]



125 Temp

20 R – good – not quite
so good as 16 R – spongy
one side – not jumped out
so much as 16 R –

[ITEM FOUND IN BOOK]

129

Dials chipped out
probably wants 140
to stop it – Sherry —
clipping out makes it
vertical Quite good—
jumps out – wants higher
temperature 140 @ 145 or higher
So can track deeper without
chipping —

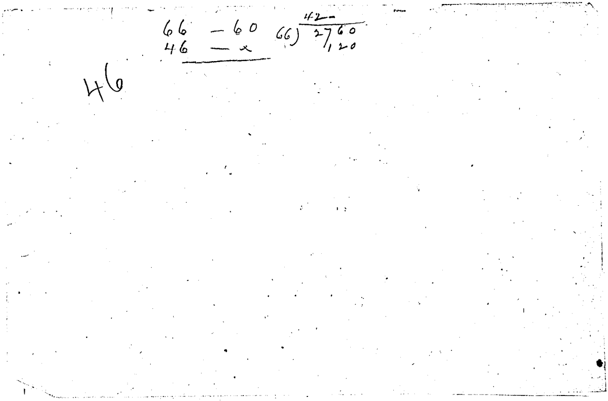
---

14 R – jumped bad—
good sounds [illegible]
no clip out polished
modulation

jumped when bad
to reproduce – shaved by
taken over again

[ITEM FOUND IN BOOK]

[ON BACK OF PRECEDING PAGE]



$$\begin{array}{ll} 66 & - 60 \\ 46 & - x \end{array}$$

$$\begin{array}{r} 42 \\ 66\overline{)\,2760} \\ 120 \end{array}$$

46

[ITEM FOUND IN BOOK]

129 —

No 11 R.

Seems to be chipped out

looks funny

Jumped out — no Efflorescent

Cylinder good —

good — very little scratch
although record Rough —
if this could be got rid
of it would be very good —
it is chipped in bottom of slots
probably wants 140 deg —